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Remarks

Reconsideration of remaining claims 1-13, 15-20, and 22-24 is respectfully requested.

In the Office action dated January 19, 2005 (application Paper No. not shown), the Examiner restated the Restriction Requirement from an earlier telephone conversation and also offered an objection to elected claim 6 and a rejection of all pending (elected) claims 1-24 under 35 USC §§ 102(e) and 103(a). The Examiner's objection and rejections will be discussed below in the order appearing in the Office action.

Election of Claims

Applicants hereby affirm the telephonic election of the claims in Group I (claims 1-24), drawn to an optical coupling arrangement, classified in class 385, subclass 36. Applicants have thus cancelled claims 25-48 from this application.

Objection to the Claims

The Examiner objected to pending claim 6 in that claim 6 recited "the species and concentration of dopants", which recitation lacked the proper antecedent basis. Applicants have amended claim 6, as noted above, to correct this informality. Applicants believe that with this amendment to claim 6 this claim is now in condition for allowance.

35 USC § 102(e) Rejection - Claims 1-4, 6-11, 13-19 and 24

The Examiner first rejected the above-cited grouping of claims under 35 USC 102(e) as being anticipated by US Patent Publication 2003/0118306 (Deliwala). In particular, the Examiner cited Deliwala as teaching "an optical device with all the

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limitations set forth in the claims". In response, applicants have amended independent claim 1 to include the limitations of claim 14 and assert that amended claim 1 cannot be found to be anticipated by Deliwala.

In the rejection, the Examiner cited Deliwala as teaching "the evanescent coupling region comprises a cavity", later stating that the "cavity comprises corner edges that sharply truncate an optical beam". This is not the case and, it is asserted, is an improper characterization of Deliwala. Indeed, applicants assert that Deliwala cannot be found to "anticipate" the subject matter of amended independent claim 1 or the associated dependent claims.

As discussed throughout the specification, and defined by amended claim 1, the silicon-based prism coupler is formed to include one or more cavities in its base surface which, in combination with the evanescent coupling region, permits efficient transfer of light from the silicon prism coupler into a silicon surface waveguide and prevents the light from going back into the prism. The "prism coupler" of Deliwala (referred to as element 5110 in the text and associated drawings) does not include any type of "cavity" in its bottom surface. Indeed, the embodiment of Deliwala as illustrated in FIG. 55 includes the use of a separate "ledge" to precariously position prism coupler 5110 so as to form some sort of taper to address the coupling problem solved by applicants' use of a prism coupler including a cavity region. The "coupler" and "evanescent coupling region" are asserted to be separate elements as defined by our claims, with the "coupler" being specifically configured to provide the benefit of increased coupling efficiency. Moreover, as discussed in paragraph [0017], the cavity structure greatly facilitates the attachment of the prism coupler to a patterned wafer or die. Inclusion of a cavity structure is an inventive solution that increases its practical application and manufacturability of devices, as discussed in the specification.

It is asserted that without this teaching of the use of a cavity within the prism coupler element itself, Deliwala cannot be found to anticipate independent (amended) claim 1, or any of the other cited claims that depend therefrom. Applicants therefore respectfully request the Examiner to reconsider this rejection and find claims 1-4, 6-11, 13, 15-19 and 24 to be in condition for allowance (dependent claim 14 having been cancelled).

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35 USC § 103(a) Rejection - Claims 5, 12

Claims 5 and 12 were next rejected by the Examiner under 35 USC 103(a) as being unpatentable over Deliwala (as cited above). For the reasons explained in association with the previous rejection, applicants assert that Deliwala proposes a different coupling structure and cannot be found to render obvious applicants' arrangement utilizing a prism coupler with a cavity area to improve coupling efficiency, as defined by amended claim 1 (from which claims 5 and 12 depend). Applicants therefore respectfully request the Examiner to reconsider this rejection and find claims 5 and 12 to be in condition for allowance.

35 USC § 103(a) Rejection - Claims 20, 22 and 23

Lastly, the Examiner rejected claims 20-23 under 35 USC 103(a) as being unpatentable over Deliwala (as above), when considered with US Patent 6,021,239 (Minami et al.). The Examiner particularly cited Minami et al. as teaching the use of trapezoidal prism couplers in an optical coupling arrangement. In referring to Minami et al., it is clearly shown that the prism couplers 4 are of the same form as those of Deliwala; that is, the Minami et al. couplers do not contain, disclose or suggest the use of a "cavity" in the prism coupler element itself. Without this teaching, the combination of Minami et al. and Deliwala cannot be found to render obvious the teachings of the present invention as defined by claims 20-23. Applicants thus respectfully request the Examiner to reconsider this rejection and find claims 20, 22 and 23 (claim 21 having been cancelled) to be in condition for allowance.

In summary, applicants have amended claims 1 and 6 to overcome the Examiner's objection and rejections. Claims 14, 21 and 25-48 have been cancelled from this application. Applicants therefore respectfully request the Examiner to reconsider the objection and rejections and find the claims to be in condition for allowance. If for some

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reason or other the Examiner does not believe that the case is ready to issue and that an interview or telephone conversation would further the prosecution, the Examiner is invited to contact applicants' attorney at the telephone number listed below.

Respectfully submitted,

Maragaret Ghiron et al.

By: Wendy W. Koba
Wendy W. Koba
Reg. No. 30509
Attorney for applicant
610-346-7112

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